



ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

SUBSONIC ENGINES

ENGINE IDENTIFICATION: PW4x50
 UNIQUE ID NUMBER: 1PW053
 COMBUSTOR: Phase 3
 ENGINE TYPE: TF

BYPASS RATIO: 5.0
 PRESSURE RATIO (π_{00}): 25.4
 RATED THRUST (F_{00}) (kN): 222.4

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO _x	SMOKE NUMBER
D _p /F ₀₀ (g/kN) or SN	14.6	64.1	50.4	8.8
AS % OF ORIGINAL LIMIT	74.6	54.3	55.5	46.0
AS % OF CAEP/2 LIMIT (NO _x)			69.4	
AS % OF CAEP/4 LIMIT (NO _x)			84.6	
AS % OF CAEP/6 LIMIT (NO _x)			96.1	
AS % OF CAEP/8 LIMIT (NO _x)			115.5	

DATA STATUS

- PRE-REGULATION
 x CERTIFICATION
 - REVISED (SEE REMARKS)

TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES
 x DEDICATED ENGINES TO PRODUCTION STANDARD
 - OTHER (SEE REMARKS)

EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE
 (ANNEX 16 VOLUME II)

CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)
 x OUT OF PRODUCTION (DATE: -)
 - OUT OF SERVICE (DATE: -)

MEASURED DATA

MODE	POWER SETTING (%F ₀₀)	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO _x	
TAKE-OFF	100	0.7	2.027	0.09	0.53	25.69	6.8
CLIMB OUT	85	2.2	1.683	0.10	0.62	21.77	
APPROACH	30	4.0	0.579	0.19	2.33	11.13	
IDLE	7	26.0	0.193	6.80	36.91	3.69	
LTO TOTAL FUEL (kg) or EMISSIONS (g)			747	2104	11619	9681	-
NUMBER OF ENGINES				1	1	1	1
NUMBER OF TESTS				3	3	3	3
AVERAGE D _p /F ₀₀ (g/kN) or AVERAGE SN (MAX)				9.5	52.2	43.5	6.8
SIGMA (D _p /F ₀₀ in g/kN, or SN)							
RANGE (D _p /F ₀₀ in g/kN, or SN)							

ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT - POWER SETTINGS
 STAGE BLEED 0 (% CORE FLOW) AT - POWER SETTINGS

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	102
TEMPERATURE (K)	270
ABS HUMIDITY (kg/kg)	0.0015

FUEL

SPEC	Jet A
H/C	1.91
AROM (%)	21

MANUFACTURER: Pratt & Whitney
 TEST ORGANIZATION: Pratt & Whitney
 TEST LOCATION: Middletown, CT
 TEST DATES: 15/01/1993-19/01/1993

NO_x REGULATION PARAGRAPH

x	2.3.2 c) (CAEP/4)
	2.3.2 d) (CAEP/6)
	2.3.2 e) (CAEP/8)

REMARKS

1. Data from X693-20 with Phase 3 reduced pressure loss combustor

Compliance with Fuel Venting requirements:

- ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)